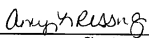


PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) 83068-US1
	Application Number 10/046,295-Conf. #2321	Filed January 16, 2002
	First Named Inventor Karen Swider Lyons et al.	
	Art Unit 1754	Examiner S. J. Bos
<p>Applicant requests review of the final rejection in the above-identified application. An amendment to place the claims in better condition for appeal has been filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 50%;"> <p><input type="checkbox"/> applicant /inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</p> <p><input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>45,814</u></p> <p><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____</p> </div> <div style="width: 45%; text-align: center;"> <p> _____ Signature</p> <p>Amy L. Rensing _____ Typed or printed name</p> <p>(202) 404-1558 _____ Telephone number</p> <p>28 February 2007 _____ Date</p> </div> </div> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.</p>		
<input type="checkbox"/> *Total of <u>1</u> forms are submitted.		

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Karen Swider Lyons et al.

Application No.: 10/046,295

Confirmation No.: 2321

Filed: January 16, 2002

Art Unit: 1754

Examiner: S. J. Bos

For: METHOD TO PREPARE DEFECTIVE METAL OXIDES WITH INCREASED
SPECIFIC CAPACITY

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In support of the pre-appeal brief request for review, applicants submit the following remarks/arguments. Claims 11 and 17-25 are pending in the present application. The examiner has rejected claims 11 and 17-25. Claims 11 and 25 are independent claims. Claims 17-24 depend either directly or indirectly from claim 11.

Rejection under 35 USC 112, first paragraph

The examiner has rejected claims 11 and 25 under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. The examiner states that in claims 11 and 25 the phrase “wherein said applying and heating introduce local ionic defects and increase lithium capacity of said metal oxide” is new matter and not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention.

Applicants respectfully disagree. Page 3, line 19 through page 4, line 5 of the application as filed provides "lithium-ion capacity of metal oxides may be controlled via point defects that may be introduced into a metal oxide by: (a) applying a mixture of O_2 and H_2O gas to a sufficient amount of a V_2O_5 metal oxide sample at a linear flow rate of about 50-350 ccm; (b) heating said metal oxide sample at a temperature of about 300-600 °C for a time period of about 6 – 72 hours; and cooling the metal oxide sample." Further, page 8, lines 11-16 of the specification as filed provide "Heating bulk V_2O_5 under O_2 , O_2/H_2O , and Ar causes no change in to the long-range structure of the metal oxide, but it significantly affects the V_2O_5 lithium capacity. Under the O_2 , Ar, and Ar/ H_2O heating steps, the Li capacity is decreased. The lithium capacity is increased for samples heated under O_2/H_2O . Since the long-range structure does not change, this suggests that local ionic defects introduced by the O_2/H_2O heat treatment, such as cation vacancies, are affecting the lithium capacity of the metal oxide." Further, FIG. 2 presents data that illustrates the effect of heating conditions under O_2 , O_2/H_2O , Ar, and Ar/ H_2O with regard to Li capacity. (See page 7, beginning on line 11 for the discussion of Fig. 2). Applicants submit that these passages and the FIG. 2 meet the written description requirement of 35 U.S.C. §112, first paragraph, and respectfully request withdraw of this rejection and reconsideration of the claims in light of the claim limitation.

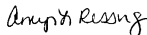
Rejections under 35 U.S.C. §103(a)

The examiner has rejected claims 11 and 17-25 under 35 U.S.C. §103(a) based upon several references, all in view of either Nishihara '181 or the Chemical Principles reference to show a statement of fact. The examiner has stated that the Nishihara reference provides that "air itself contains water vapor". Similarly, the examiner has stated that the Chemical Principles reference states that the composition of the atmosphere contains water vapor.

Applicants respectfully submit that the specification teaches against the use of "air" and respectfully request withdraw of this rejection and reconsideration in light of the additional claim limitations. While "air" itself does contain water vapor, it also contains other components that have been demonstrated in the present specification to decrease the specific capacity of the metal oxide. Specifically, the Chemical Principles reference provides that the atmosphere contains 18 specified components, plus water vapor and suspended particles. Those 18 components include O_2 and Ar (see chart in Chemical Principles reference). The specification as filed provides that the "specific capacities of the Ar-heated and O_2 -heated V_2O_5 are 8% and 25% lower than that of the as-received V_2O_5 , respectively." (see p. 7, lines 17-19 of the specification as originally filed.) Additionally, the specific capacity of the Ar/ H_2O treated V_2O_5 was 58% lower than the as-received V_2O_5 . (see p. 7, lines 14-16 of the specification as originally filed). Thus, heating a metal oxide in "air", which contains O_2 and Ar, as defined in either Nishihara and the Chemical Principles, cannot be reasonably expected to prepare a defective metal oxide having local ionic defects and increased lithium capacity. Additionally, it is well accepted that "air" is approximately 21% oxygen and 79% nitrogen, as stated in the Chemical Principles reference, whereby the oxygen partial pressure in air is 0.21 atm. The gas mixtures disclosed in the present application were a reagent, so the partial pressure of the O_2 would be much higher than that of "air". The difference in the reagent concentration affects the resulting stoichiometry of the metal oxide material, as it reaches equilibrium with the concentration of reagents in the gas. Thus, the present application teaches away from the use of "air", as air encompasses additional elements that lower the specific capacity of the treated metal oxide and air has a different O_2 partial pressure that would affect the affects the resulting stoichiometry of the defective metal oxide. Applicants respectfully request withdraw of this rejection and reconsideration.

Applicants therefore respectfully request a pre-appeal brief review of this final rejection. No additional fee is believed due for this action. However, kindly charge any additional fees due, or credit overpayment of fees, to Deposit Account No. 50-0281. Applicants respectfully request that a the rejection be withdrawn and a timely Notice of Allowance be issued in this case.

Respectfully Submitted,



Amy L. Ressing
Reg. No. 45,814

Naval Research Laboratory
4555 Overlook Ave. SW
Washington, DC 20375
202-404-1558